Curriculum Vitae

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Overview

My technical career as an employee of JPL, has been approximately three years, and has included operation, maintenance and repair of TMO's telescopes as well as OCTL's atmospheric instruments. I am deploying new instruments and repairing damaged instruments at TMO. I often communicate with manufactures about deployment procedures, repairs, and quotes for parts or instruments. I'm excellent at troubleshooting and identifying problems. I can evaluate situations quickly to determine repair needs and provide innovative problem-solving solutions for instruments of atypical problems. I am responsible for insuring that all training is complete of personnel before use of TMO's telescopes. My responsibilities as a technician require skill, care and attention to safety such that failures do not arise that would cause injury, loss of equipment, or data. I currently have a Bachelor of Science in Mathematics with 3 years of related experience. I participate on laser communications and near-earth object (NEO) teams within 337 and 329. I've devised (with AutoCAD), fabricated, assembled and installed a bidirectional control circuit that operators a telescope shutter that complies with engineering and research specifications. Also, I have devised (with AutoCAD) plans for prototype testing of parts using a 3D printer.

Operation, maintenance, and user support of TMO's telescopes

In 2016 I joined Laboratory Studies and Atmospheric Observations (329H) group. During my time with optical astronomy I have operated, maintained, and done user support for our telescopes. Half of my time is spent on regularly testing and implementing parts of the telescopes' systems. On occasion I also work on-call during the night to provided support as needed for the users. I provide routine maintenance for the domes, telescopes, and sub systems of the telescopes. This maintenance assures the telescopes are ready for observations.

Implementation, maintenance and repair of atmosphere monitoring systems

I am responsible for making sure that multiple instruments are running in a continuous fashion. They included two seeing monitors which provide nighttime seeing, Ro and transparency monitoring and need regular alignment on Polaris. Also, there are three solar scintillation monitors which use the sun to acquire seeing and Ro which are validated by a solar DIMM which I operate on a weekly basis. Also, there are four cloud imaging cameras (one of which is an all sky) which tracks the movement and optical depth of clouds. Finally, there are two particle profilers which measure the counts per minute of different air borne particles. My skills allow me to align, maintain, repair and implement these and future systems as needed.

Implementation and testing of LCRD beacon lasers

I am a member of the team that is currently implementing, aligning, calibrating, and characterizing the LCRD beacon lasers. My skills allow me to run the beacon lasers in a safe manner to ensure no risk of damage to personnel or property. This beacon laser will be used in the future to transmit data to a Geostationary satellite for relay to a second asset.

Projects

Table Mountain Observatory – Optical Astronomy (TMO)
Programs at TMO include high precision astrometric observations in support of NASA and international spacecraft mission navigation, confirmation and recovery of Near-Earth Objects (comets and asteroids) that pose a potential impact hazard to the Earth, physical characterization of spacecraft mission targets (planets, satellites, comets, and asteroids), astronomical research into studies of the solar system and beyond, and new technology testing for hardware developed at JPL.

Laser Communications Relay Demonstration (LCRD)
The Laser Communications Relay Demonstration mission, or LCRD, proposes to revolutionize the way we send and receive data, video and other information, using lasers to encode and transmit data at rates 10 to 100 times faster than today's fastest RF radios, using significantly less mass and power.

Professional Experience

Jet Propulsion Laboratory, Research Technician II, Science Division, (2016 – Present)

Columbus Technologies and Services, Internship, Jet Propulsion Laboratory, Optical Communications Telescope Laboratory, (2013 – 2016)

Education

A.S. Math and Science, Victor Valley College, Victorville, CA, 2012.

B.S. Mathematics, California State Polytechnic University, Pomona, Pomona, CA, 2018.

M.S. Mathematics, California State Polytechnic University, Pomona, Pomona, CA, 2018 – Present.

Community Service

An active member of the community in university astronomy team with publication (two as co-author) NASA ADS.

Scientific Publications

1. MPEC 2018-S50